PATENT CLAIMS:

1. An apparatus for purifying contaminated water by photochemical oxidation, wherein at least a sub-flow of water is directed through a flow channel wherein the water is irradiated with UV electromagnetic radiation from at least one UV lamp assembly,
characterised in that
said at least one UV lamp assembly includes a high-pressure UV halogen lamp which is mounted generally parallel with the flow direction in the channel.

2. An apparatus according to claim 1, wherein the at least one lamp assembly includes a tubular UV absorber around the lamp.

3. An apparatus according to claim 2, wherein the absorber is made of an infrared radiation absorbing material.

4. An apparatus according to claim 2 or 3, wherein the absorber is made of or coated by a radiation protective material preventing decomposing of $OH^{\bullet}$ and preventing the creation of atomic oxygen O^{3P}.

5. An apparatus according to any of the claims 1 to 4, wherein the lamp assembly includes means for supplying dispersion chemical to the water upstream the UV high-pressure lamp.

6. An apparatus according to claim 5, wherein at least one oxidation chemical is dispersed in the water.

7. An apparatus according to claim 6, wherein said oxidation chemical is oxygen, hydrogen peroxide, ozone, perchloric acetic acid or any combination thereof.

8. An apparatus according to any of the claims 1 to 7, wherein the UV high-pressure lamp radiates intensive UV electromagnetic radiation with a wave length in the range of 150 nm to 260 nm, preferably in the range of 160 nm to 220 nm, and most preferably in the range of 192 nm to 205 nm.

9. An apparatus according to claim 8, wherein the UV high-pressure lamp radiates the water with at least 25 mJ/cm^2, preferably at least 120 mJ/cm^2.

10. An apparatus according to any of the preceding claims, wherein an array of lamp assemblies are parallelly arranged in a cassette module, which is insertable into the flow channel.

11. A method of purifying contaminated water by photochemical oxidation, whereby at least a sub-flow of water is directed through a flow channel wherein the water is irradiated with UV electromagnetic radiation from at least one UV lamp assembly, characterised in that
the water flow is radiated with UV radiation by at least one UV halogen high-pressure lamp assembly, which is energy intensive wave lengths in the range of 150 nm to 260 nm, preferably in the range of 160 nm to 220 nm, and most preferably in the range of 192 nm to 205 nm.

12. A method according to claim 11, whereby the at least one lamp assembly includes a tubular UV absorber around the lamp shielding the water flow through the lamp assembly.

13. A method according to claim 12, whereby the absorber is made of an infrared radiation absorbing material.

14. A method according to claim 12 or 13, whereby the absorber is made of or coated by a radiation protective material preventing decomposing of $OH^{\bullet}$ and preventing the creation of atomic oxygen O^{3P}.

15. A method according to claim 11 or 14, whereby dispersion chemical is supplied into the water flow upstream the UV high-pressure lamp, preferably in the inlet opening of the tubular absorber.

16. A method according to claim 15, whereby at least one oxidation chemical is dispersed in the water.

17. A method according to claim 16, whereby the oxidation chemical is oxygen, hydrogen peroxide, ozone, perchloric acetic acid or any combination thereof.

18. A method according to any of the claims 11 to 15, whereby the UV high-pressure lamp radiates the water with at least 25 mJ/cm^2, preferably at least 120 mJ/cm^2.

19. A method according to any of the claims 11 to 17, whereby an array of lamp assemblies are parallelly arranged in the flow channel in a cassette module, which is inserted into the flow channel.